

**ABSTRACT**

A semiconductor optical amplifier (SOA) is placed in the optical path between the tunable laser and the external modulator on a DWDM optical transmitter. The modulator transfer function is measured using low-level amplified spontaneous emission light output from the SOA in order to find the modulator bias corresponding to minimum transmission. The external modulator is biased to the point of minimum transmission to reduce the transmitter output power during laser turn-on. The SOA bias is also turned off to provide further attenuation as the laser is turned on. Similarly, to avoid emitting off-wavelength light during wavelength changes, the transmitter output is attenuated with a combination of low SOA bias current and biasing the modulator to its minimum transmission point. In both cases, the laser wavelength is allowed to stabilize without interfering with adjacent DWDM channels.

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